



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,252	09/22/2003	Kazuhiro Hirahara	0170-1016P	9516
2292	7590	11/07/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			HYUN, PAUL SANG HWA	
			ART UNIT	PAPER NUMBER

1743

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,252

Applicant(s)

HIRAHARA ET AL.

Examiner

Paul S. Hyun

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

REMARKS

Claims 1 and 2 are pending. Because claims were not submitted with Applicants' arguments, it will be assumed that the claims were not amended.

The art rejections cited in the previous Office action are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vestal (US 4,958,529) in view of Huber (US 4,989,976), Barnes et al. (US 4,688,935) and Carnahan (US 5,723,861).

Vestal discloses an analytical apparatus for analyzing liquid samples (see Fig. 3). The apparatus comprises a liquid chromatographic device connected to a nebulizer 16 via a channel. The apparatus further comprises a carrier gas source in fluid communication with the nebulizer via a conduit 33 having a flow meter 40 that is disposed therein for controlling the flow rate of the carrier gas. Lastly, the apparatus comprises a sample gas passageway having one end connected to the outlet of the vaporizer and the other end connected to the inlet of an ICP emission spectrometer 14, wherein a momentum separator 15 is disposed in the sample gas passageway.

The apparatus disclosed by Vestal differs from the claimed invention in that the reference does not disclose a liquid mass flow controller or gas cylinders filled with standard gas for calibration. The reference also does not disclose that the apparatus can be used to analyze organometallic compounds.

In regards to the liquid mass flow controller, Huber discloses a device for controllably supplying a sample liquid to a nebulizer. The device comprises a control device 46 that controls the speed of a peristaltic pump 48 that feeds the sample liquid to the nebulizer (see lines 50-54, col. 5).

In regards to the plurality of gas cylinders filled with standard gas, Carnahan discloses an analyzer comprising a calibration device 20 situated downstream of the sample flow for calibrating a spectrometer. The calibration device comprises cylinders filled with standard gas and a flow sensor for controlling the flow of the standard gas fed into the spectrometer (see Fig. 2).

In regards to the analysis of an organometallic compound, Barnes et al. disclose an analyzer adapted to analyze organometallic compounds. The analyzer comprises a vaporizer that vaporizes a organometallic liquid sample and feeds the vaporized sample to an ICP emission spectrometer.

In light of the teachings of Huber, it would have been obvious to one of ordinary skill in the art to provide the apparatus disclosed by Vestal with a liquid flow controller in order to provide a means to control the rate of sample fed into the nebulizer. In light of the teachings of Carnahan, it would have been obvious to one of ordinary skill in the art to provide the apparatus disclosed by Vestal with a calibration device comprising gas

Art Unit: 1743

cylinders filled with standard gas and a flow sensor downstream of the momentum separator in order to provide a means for calibrating the ICP emission spectrometer. In light of the teachings of Barnes et al. it would have been obvious to one of ordinary skill in the art to analyze the amount of impurities in an organometallic sample using the apparatus disclosed by Vestal.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vestal in view of Huber, Barnes et al. and Carnahan as applied to claim 1, and further in view of Mitsumaki et al. (US 4,696,183).

Vestal in view of Huber, Barnes et al. and Carnahan disclose the apparatus of claim 1, but the references do not disclose that each individual gas cylinder comprises a separate passageway, each passageway comprising a flow controller.

Mitsumaki et al. disclose an analysis system comprising a plurality of chambers 67 and 68, each chamber having standard gas therein for calibrating a detector. Each chamber is connected to the detector via an individual conduit (see Fig. 1). It would have been obvious to one of ordinary skill in the art to provide an individual passageway for each of the gas cylinder of the modified Vestal apparatus so that the same passageway is not used for the transport of different calibration gases.

Response to Arguments

Applicants' arguments with respect to the art rejections cited in the previous Office action have been fully considered but they are not persuasive.

One of Applicants' arguments with respect to the rejections is predicated on the fact that the individual references do not disclose all the limitations of the claimed invention. However, this argument is not persuasive because the combination of the Vestal reference and the secondary references disclose all the limitations of the claimed invention. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants' argument that Vestal does not disclose an in-line monitor is not persuasive. The term "in-line monitor" is not a well-known term that has a specific definition. The claims also do not recite the function or the purpose of the in-line monitor. Therefore, any device capable of monitoring a gas constitutes an in-line monitor. The momentum separator disclosed by Vestal constitutes an in-line monitor. It monitors the aerosol flowing through the flow chamber and increases the concentration of particles of interest relative to the solvent vapor and carrier gas.

Applicants' argument that the nebulizer disclosed by Vestal differs from the vaporizer of the claimed invention is not persuasive. First, the claims do not recite the vaporizing ability of the vaporizer. Therefore, any device that converts a liquid to a gaseous form constitutes the claimed vaporizer. The Vestal reference discloses that the contents flowing through the flow chamber are vapors (see lines 42-50, col. 5). Second, lines 29-31, page 7 of the Specification of the present application discloses that the vaporizer produces a sample mixture in spray form, which undermines Applicants'

Art Unit: 1743

argument that the vaporizer of the claimed invention differs from a device that produces spray droplets.

Applicants' argument with respect to the Barnes et al. reference is not persuasive. The Barnes et al. reference was relied upon merely to show that organometallic compounds can be analyzed using an analyzer comprising a nebulizer. Therefore, Applicants' argument with respect to the syringe is not pertinent.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

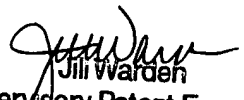
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul S. Hyun whose telephone number is (571)-272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

Art Unit: 1743

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PSH
11/02/06


Jill Warden
Supervisory Patent Examiner
Technology Center 1700